Prevalence of Different Types of Malocclusion in the Patients Visiting Government Dental College, Jammu in India

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Abstract

Aim: To determine the prevalence of different types of malocclusion based on Angle's classification in Jammu.

Materials and Methods: The sample size included 696 subjects (369 males and 327 females) in the age group of 13-14 years. The malocclusion determination was based on the Angle's classification of malocclusion.

Results: The results showed that 83% of the subjects had malocclusion. Class I malocclusion constituted the major proportion of malocclusion, which was found in 67% of the studied population. Class II Division I constituted 8% of the sample size. Class II Division II constituted 6% of the sample size. Class III constituted 2% of the total sample size.

Conclusion: Majority of the subjects had Angle's Class I malocclusion with crowded incisors. There is a need to simplify and standardize criteria for assessing malocclusion and to plan the need of orthodontic treatment among the population.

Key words: Angle's classification, Incidence, Malocclusion

INTRODUCTION

The dental malocclusion exhibits the third highest prevalence among oral pathologies, after tooth decay and periodontal disease and comes under worldwide dental priorities.[1] A well aligned dental arch is essential for the health of oral cavity and stomatognathic system and enhances the self-esteem of the individual. To have a good treatment plan for treating malocclusion, there is a necessity to find the prevalence of the condition in the particular population. To find the prevalence of malocclusion, adequate basic information is available in the developed countries, but developing countries are still lacking this information.[2-7]

Occlusal traits vary among different ethnic groups, and so is the prevalence and severity of malocclusion. A large number of studies on the prevalence of malocclusion have been done in the past. The reported studies showed that prevalence of malocclusion among Indian subjects is as low as 19% to as high as 90%.[8]

Therefore, the aim of the study is to determine the prevalence of different types of malocclusion based on Angle's classification in Jammu.

MATERIALS AND METHODS

The sample size included 696 subjects (369 males and 327 females) in the age group of 13-14 years visiting the Department of Pedodontics and Preventive Dentistry, Indira Gandhi Government Dental College, Jammu. The inclusion criteria included that none of the subjects had previously undergone orthodontic treatment; all the subjects had first permanent molar. A single dentist trained for the specific study conducted the clinical examination. The malocclusion

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determination was based on the Angle's classification of malocclusion.

The malocclusion was evaluated with the help of intra-oral photographs, orthodontic models and clinically in centric occlusion position, which was attained by asking the subject to swallow and then to bite the teeth together. The subjects with properly aligned arches, minimal overbite and overjet and with Class I molar relationship was classified as normal.

The subjects with Class I malocclusion had the following characteristics - Class I molar relationship, crowded incisors or labial canines, or both (Dewey type I), protruded maxillary incisors (Dewey type II), anterior end to end occlusion or anterior cross bite or both (Dewey type III), unilateral or bilateral posterior cross bite (Dewey type IV), mesial drift of molars (Dewey type V), anterior or posterior open bite, and deep anterior overbite.

The subjects with Class II malocclusion were subdivided into Division I and Division II based on the molar relationship and inclination of incisors in the arches.

The subjects with Class III malocclusion had Class III molar relationship, crowded incisors, spacing between the incisors, reverse overjet.

Examinations were computerized and analyzed using Statistical Package for Social Sciences version 16. Chi-square test was used for computing statistical significance.

RESULTS

The results showed that 82.9% of the subjects had malocclusion. Class I malocclusion constituted the major proportion of malocclusion, which was found in 66.9% of the studied population. Class II Division I constituted 8.3% of the sample size. Class II Division II constituted 5.9% of the sample size. Class III constituted 1.8% of the total sample size. There were 369 male participants, which constituted 53.01% of the total sample size. There were 327 female participants, which constituted 46.98% of the total sample size. There was no statistically significant gender difference found ($P > 0.05$) Tables 1 and 2.

DISCUSSION

The prevalence of normal occlusion was 17.1% in this study, and other classes of occlusion constituted 82.9% of which Angle's Class I malocclusion was most frequent. The high incidence of malocclusion with Angle's Class I malocclusion as the most predominant among all the types in this study was consistent with the previous studies as

Table 1: Prevalence of various malocclusion

Occlusal classification	N (%)
Normal occlusion	119 (17.1)
Class I	466 (66.9)
Class II Division I	58 (8.3)
Class II Division II	41 (5.9)
Class III	12 (1.8)
Total	696 (100)

P=1, df=4

Table 2: Gender distribution

Occlusal classification	Male	Female
Normal occlusion	58	61
Class I	243	223
Class II Division I	38	20
Class II Division II	20	21
Class III	10	02
Total	369	327

P=0.05, df=4

reported by Sidhu,[9] Prasad, and Savadi.[10] However, results of few of the studies as done by Rao *et al.*[11] which reported a low incidence of malocclusion are in disagreement with the results of our study.

Our study shows the prevalence of Class III malocclusion to be 1.8%, which is in accordance with the results reported by the study conducted by Rao *et al.*[11] However, study conducted by Kharbanda[12] showed higher prevalence of Class III malocclusion in Delhi, and by Tewari[13] in Punjab. Lower prevalence of Class III malocclusion was reported by Jacob and Mathew[14,15] in Trivandrum.

No statistically significant gender differences were found in various as well as in total prevalence of the malocclusion which was in accordance with the results of the study conducted by Das and Reddy[16] in children of Bengaluru.

CONCLUSION

Majority of the subjects had Angle's Class I malocclusion with crowded incisors. There is a need to simplify and standardize criteria for assessing malocclusion and to plan the need of orthodontic treatment among the population.

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